



MARIS STELLA HIGH SCHOOL (PRIMARY)  
PRELIMINARY EXAMINATION  
PRIMARY 6 MATHEMATICS  
23 AUGUST 2019  
PAPER 1  
(BOOKLET A)

15 questions

20 marks

Total time for Booklets A and B: 1 hour

NAME : \_\_\_\_\_ (     )

CLASS : PRIMARY 6 \_\_\_\_\_

INSTRUCTIONS TO CANDIDATES

1. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. FOLLOW ALL INSTRUCTIONS CAREFULLY.
3. ANSWER ALL QUESTIONS.
4. SHADE YOUR ANSWERS IN THE OPTICAL ANSWER SHEET (OAS) PROVIDED.
5. YOU ARE NOT ALLOWED TO USE A CALCULATOR.



Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, four options are given. One of them is the correct answer. Make your choice and shade your answer (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet. (20 marks)

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1. What is the value of the digit 6 in 802 639?

- (1) 60 ones
- (2) 60 tens
- (3) 60 hundreds
- (4) 60 thousands

2. Which digit in 36.54 is in the tenths place?

- (1) 5
- (2) 6
- (3) 3
- (4) 4

3. 408 670 is 10 000 more than \_\_\_\_\_.

- (1) 308 670
- (2) 398 670
- (3) 418 670
- (4) 418 670

4. Express  $1\frac{2}{8}$  as a decimal.

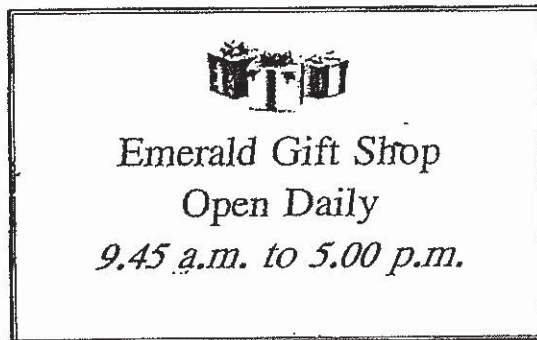
- (1) 1.14
- (2) 1.25
- (3) 1.28
- (4) 1.82

5. Express 3040 cm in m.

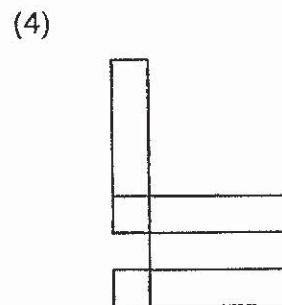
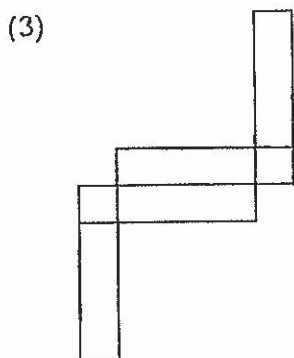
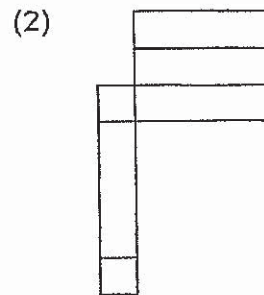
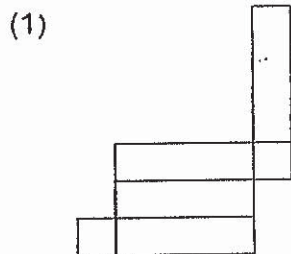
- (1) 3.4 m
- (2) 3.04 m
- (3) 30.04 m
- (4) 30.4 m

6. The opening hours of a shop are shown below. How long is the shop open each day?

- (1) 7 h 15 min
- (2) 7 h 45 min
- (3) 8 h 15 min
- (4) 8 h 45 min



7. The figures below are made up of 4 rectangles and 2 squares. Which one of them **cannot** be folded into a cuboid?



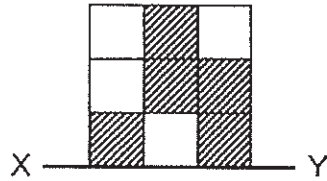
8. In a basket of 40 plastic balls, 15 of them are blue and the rest are red.  
 What is the ratio of the number of blue plastic balls to the number of red plastic balls?

- (1) 3 : 5
- (2) 5 : 3
- (3) 3 : 8
- (4) 5 : 8

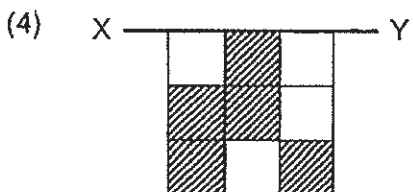
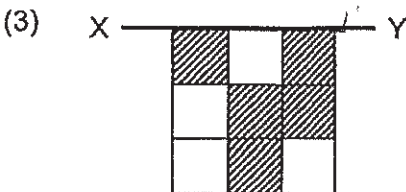
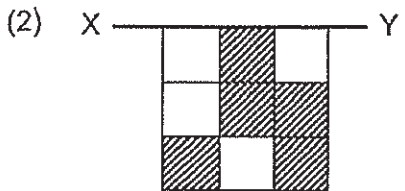
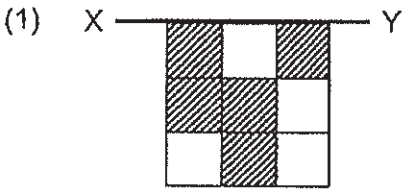
9. Which of the following fractions is the largest?

- (1)  $\frac{1}{3}$
- (2)  $\frac{3}{7}$
- (3)  $\frac{-5}{9}$
- (4)  $\frac{2}{5}$

10. The top half of a symmetric figure is shown below.



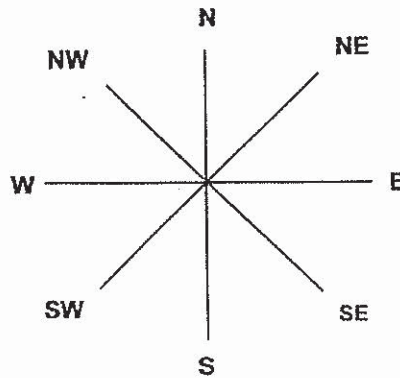
XY is the line of symmetry. Which one of the following completes the symmetric figure?



11. Charles bought  $b$  packets of sweets. Each packet contains 7 sweets. If she gave away 2 sweets from each packet, how many sweets does Charles have left in terms of  $b$ ?

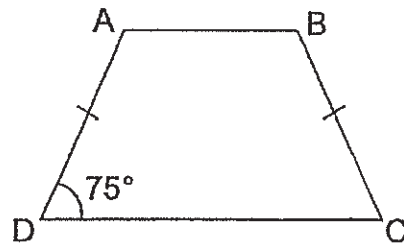
- (1)  $5b$
- (2)  $7b$
- (3)  $b + 5$
- (4)  $7b - 2$

12. After turning  $135^\circ$  in the clockwise-direction, Jack faced West. From his original direction, where will he face if he turned a  $270^\circ$  the anti-clockwise- direction instead?



- (1) North-east
- (2) North-west
- (3) South-east
- (4) South-west

13. ABCD is a trapezium not drawn to scale.

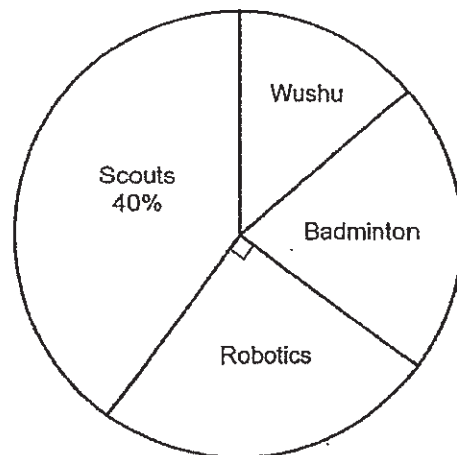


What are the sizes of the other three angles in the trapezium?

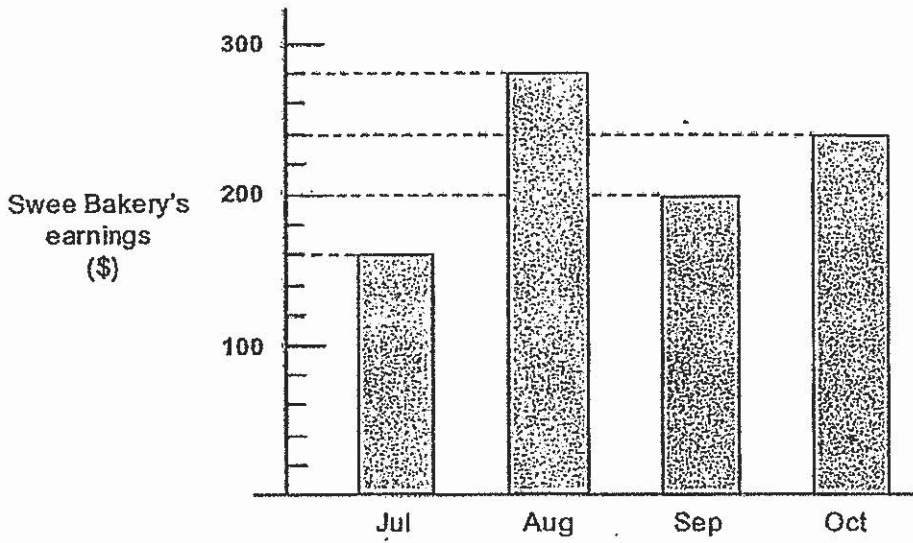
	$\angle ABC$	$\angle BCD$	$\angle DAB$
(1)	$75^\circ$	$75^\circ$	$105^\circ$
(2)	$75^\circ$	$105^\circ$	$75^\circ$
(3)	$105^\circ$	$75^\circ$	$105^\circ$
(4)	$105^\circ$	$105^\circ$	$75^\circ$

14. The pie chart shows the CCAs of 200 students in a school. The ratio of the number of students in Wushu to the number of students in Badminton is 2 : 3. What percentage of the students are in Badminton?

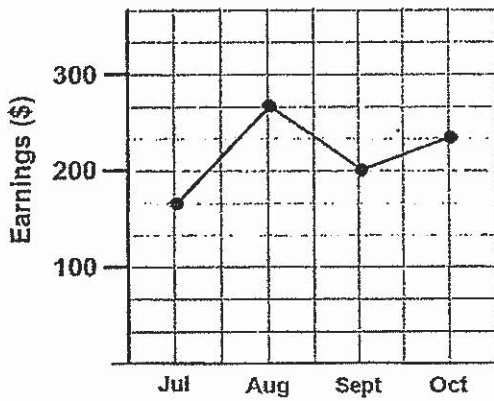
- (1) 14%  
 (2) 21%  
 (3) 35%  
 (4) 65%



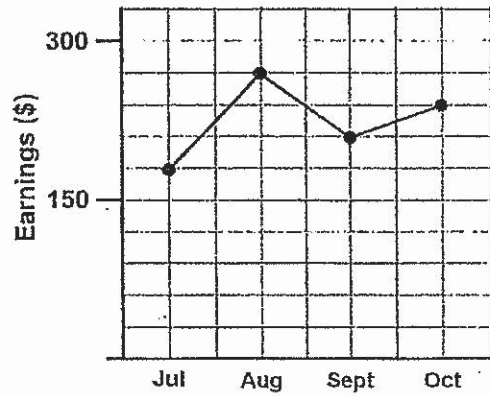
15. The bar graph below shows how much Swee Bakery earned from the sales of their birthday cakes from July to October last year. Which of the following line graphs shows the correct representation of Swee Bakery's earnings for last year?



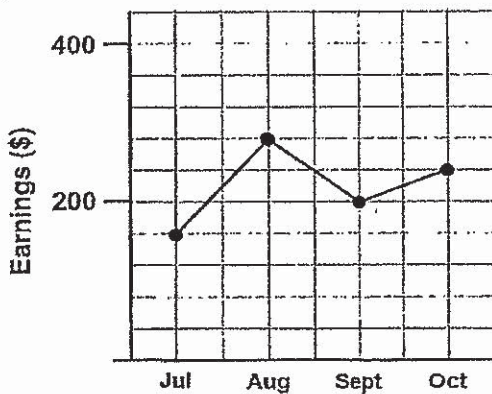
(1)



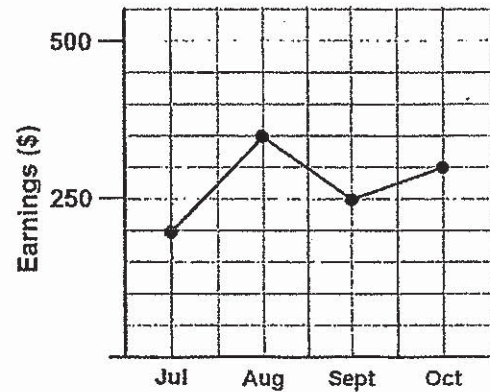
(2)



(3)



(4)



END OF BOOKLET A  
GO TO BOOKLET B





MARIS STELLA HIGH SCHOOL (PRIMARY)  
PRELIMINARY EXAMINATION  
PRIMARY 6 MATHEMATICS  
23 AUGUST 2019  
PAPER 1  
(BOOKLET B)

15 questions

25 marks

Total time for Booklets A and B: 1 hour

NAME : \_\_\_\_\_ (     )

CLASS : PRIMARY 6 \_\_\_\_\_

INSTRUCTIONS TO CANDIDATES

1. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
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MARKS OBTAINED FOR		
PAPER 1 (BOOKLET A)	/ 20	Parent's Signature: _____
PAPER 1 (BOOKLET B)	/ 25	
TOTAL	/ 45	Date: _____

Questions 16 to 20 carry 1 mark each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answer in the units stated. (5 marks)

Do not write in this space.

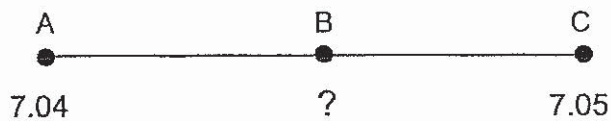
16. Find the value of  $10\,000 - 706$ .

Answer : \_\_\_\_\_

17. Find the value of  $\frac{2}{15} \div 6$ .  
Give your answer in its simplest form.

Answer : \_\_\_\_\_

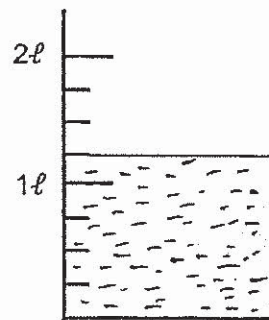
18. In the number line below,  $AB = BC$ . What decimal is represented by B?



Answer : \_\_\_\_\_



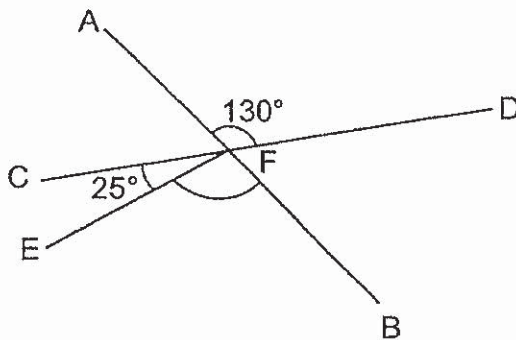
19. How much water is there in the container?



Do not write in this space.

Answer : \_\_\_\_\_ ml

20. AB and CD are straight lines. Find  $\angle EFB$ .



Answer : \_\_\_\_\_ °



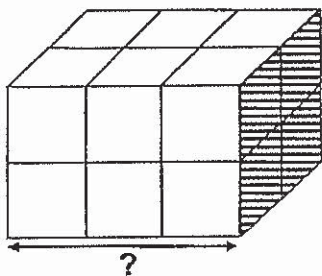
Questions 21 to 30 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answer in the units stated. (20 marks)

Do not write in this space.

21. Roy had some money in his wallet. He spent  $\frac{3}{4}$  of his money on 3 mangoes and 6 pears. A mango cost thrice as much as a pear. How many pears could Roy buy with the rest of his money?

Answer : \_\_\_\_\_

22. 12 identical small cubes are joined together to form a cuboid shown below. The shaded face of the cuboid is  $16 \text{ cm}^2$ . Find the length of the cuboid.

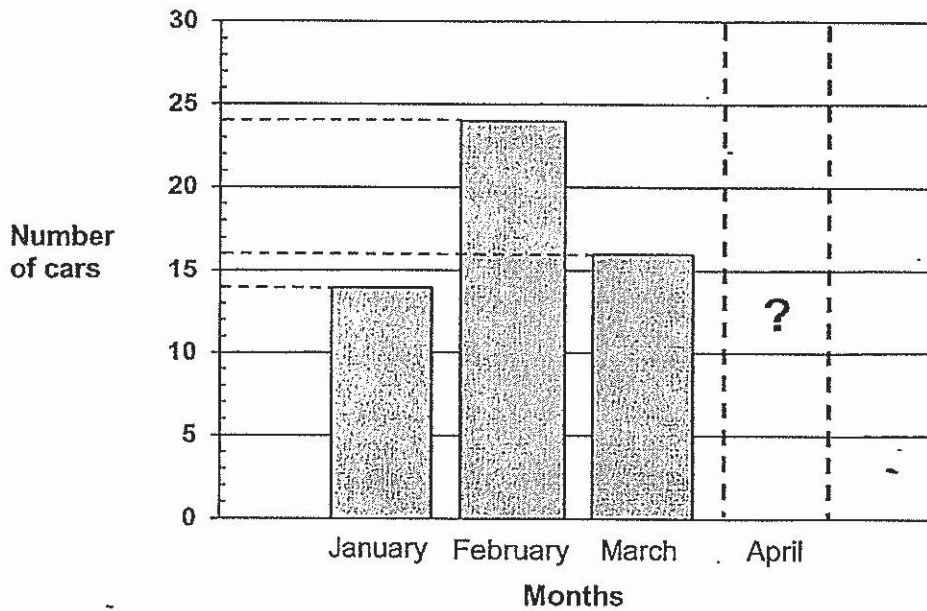


Answer : \_\_\_\_\_ cm



23. The bar graph shows the number of cars sold by a car dealer in 4 months. The bar that shows the number of cars sold in April has not been drawn.

Do not write in this space.



The number of cars sold in February was 30% of the total number of cars sold in the 4 months. Find the number of cars sold in April.

Answer : \_\_\_\_\_

24. The table below shows the marks Zack scored for his first three Mathematics tests. He wants his average score to be 72 marks. How many marks must he score for the 4th test?

Test	1	2	3	4
Score	70	68	72	?

Answer : \_\_\_\_\_



25. The table shows the time taken by 4 runners to complete 50 metres.

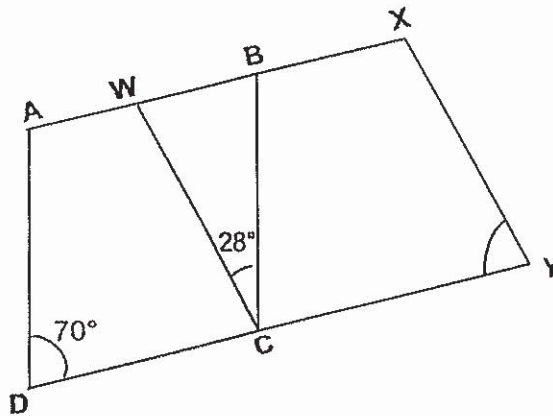
Name of runner	Time (in seconds)
Ali	40.8 s
Ben	29.5 s
Cathy	29.2 s
Doris	29.7 s

Do not write in this space.

Each statement below is either true, false or not possible to tell from the information given. For each statement, put a tick (✓) in the correct column.

	True	False	Not possible to tell
a) Doris ran faster than Ben.			
b) Ali took 81.6 s to run 100 m.			
c) The average speed of the 4 runners is faster than Ali's speed.			

26. In the figure below, AX and DY are straight lines. ABCD and WXYC are parallelograms. Find  $\angle XYC$ .

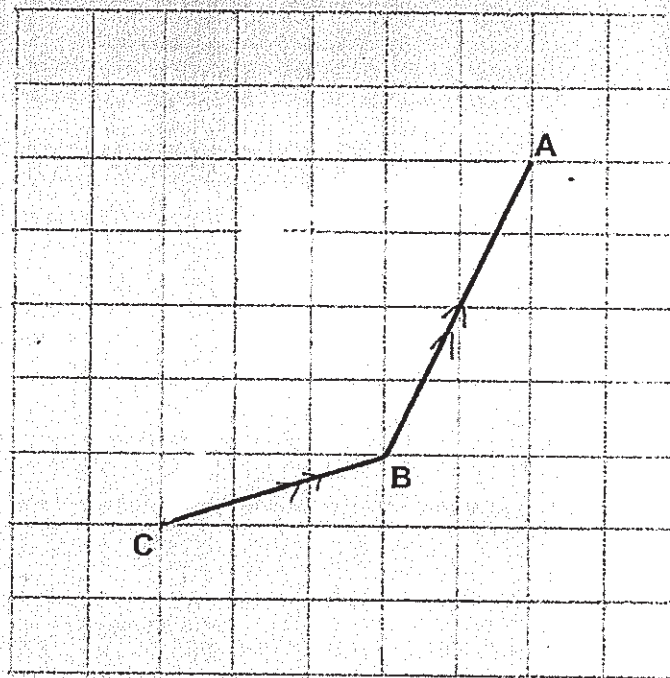


Answer : \_\_\_\_\_ °

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27. (a) Complete the parallelogram ABCD in the grid below.



Do not  
write in  
this  
space.

- (b) Measure and write down the size of  $\angle ABC$ .

Ans : \_\_\_\_\_<sup>o</sup>

28. Molly walked to school from her home at a speed of 60 m/min. She took 20 min to reach school. How long would it take her to reach school if she walked at 50 m/min?

Answer : \_\_\_\_\_ min



29. The ratio of the length to the breadth of a rectangle is 7 : 5. The length of the rectangle is 18 cm longer than its breadth. Find the perimeter of the rectangle.

Do not write in this space.

Answer : \_\_\_\_\_ cm

30. After a quiz, a group of friends calculated their average score. They found that if James got 20 more marks than what he did, they would have an average score of 80 marks. If he got 4 more marks, their average score would become 78 marks. How many friends are there in the group including James?

Answer : \_\_\_\_\_

End of Booklet B





MARIS STELLA HIGH SCHOOL (PRIMARY)  
PRELIMINARY EXAMINATION  
PRIMARY 6 MATHEMATICS  
23 AUGUST 2019  
PAPER 2

17 questions  
55 marks  
Time: 1 h 30 min

NAME : _____ (     )
CLASS : PRIMARY 6 _____

**INSTRUCTIONS TO CANDIDATES**

1. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. FOLLOW ALL INSTRUCTIONS CAREFULLY.
3. ANSWER ALL QUESTIONS.
4. SHOW YOUR WORKINGS CLEARLY AS MARKS ARE AWARDED FOR CORRECT WORKING.
5. WRITE YOUR ANSWERS IN THIS BOOKLET.
6. YOU ARE ALLOWED TO USE A CALCULATOR.

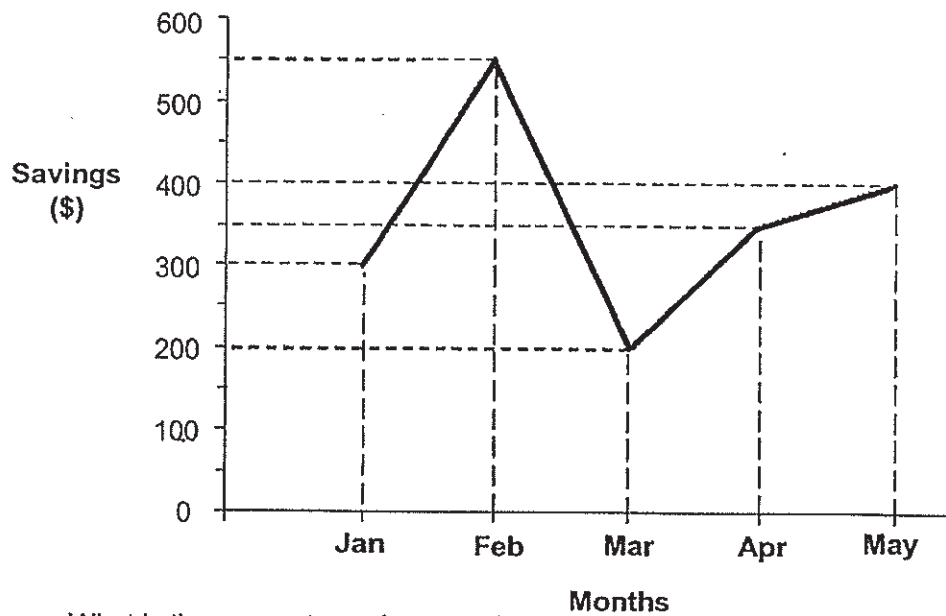
MARKS OBTAINED FOR		
PAPER 1 (BOOKLET A & B)	/ 45	Parent's Signature: _____
PAPER 2	/ 55	
TOTAL	/100	Date: _____



Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the space provided. For questions which require units, give your answers in the units stated. (10 marks)

Do not write in this space.

1. The graph below shows the amount of money Patrick saved from January to May.



What is the percentage decrease in the amount of money Patrick saved from February to March?

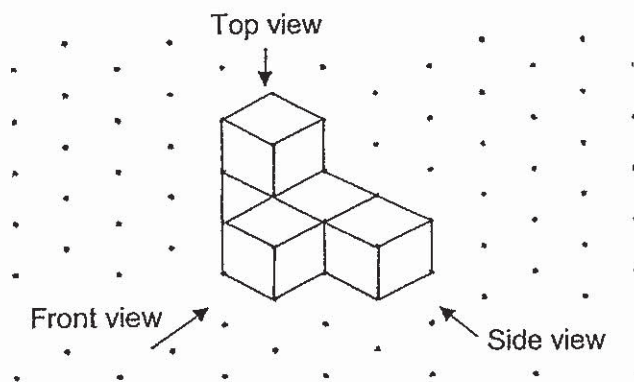
Answer : \_\_\_\_\_ %

2. Alice and Ben baked a total of 865 cookies. Alice sold  $\frac{3}{5}$  of her cookies and Ben sold 85 cookies. The number of cookies Alice has left was twice the number of cookies Ben has left. How many cookies has Ben left?

Do not write in this space.

Answer : \_\_\_\_\_

3. Draw the top and side views of the solid in the grid provided below.



Top View	Side View

4. There were 800 students in a school. 40% of the students were boys. More boys joined the school and the percentage of boys became 60% of the new total. How many boys were there in the end?

Do not write in this space.

Answer : \_\_\_\_\_

5. Stan had 15 pieces of \$2 and \$5 notes. He exchanged some \$2 notes for \$5 notes and had an equal number of \$2 and \$5 notes in the end. How many \$5 notes did Stan have in the end?

Answer : \_\_\_\_\_

For questions 6 to 17, show your working clearly and write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question. (45 marks)

Do not write in this space.

6. Andy has  $k$  stamps. Muthu has three times as many stamps as Andy. James has 8 more stamps than Muthu.

How many stamps do they have altogether?  
(Express your answer in terms of  $k$ )

If  $k = 12$ , how many stamps do they have altogether?

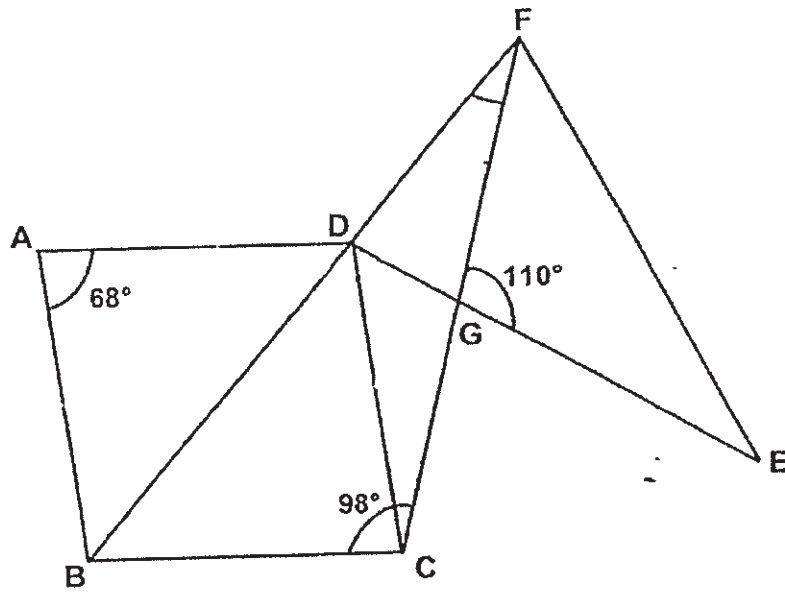
Answer : (a) \_\_\_\_\_ [2]

(b) \_\_\_\_\_ [1]

7. Ethan and Daniel have some marbles. If Ethan gives Daniel 16 marbles, both of them will have an equal number of marbles. If Daniel gives Ethan 9 marbles, the ratio of the number of marbles Ethan has to the number of marbles Daniel has will be 6 : 1. How many marbles do the two boys have altogether?

Answer : \_\_\_\_\_ [3]

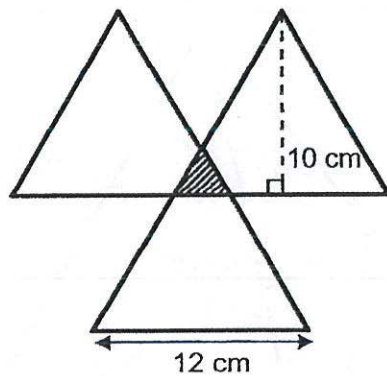
8. The figure below is not drawn to scale. ABCD is a rhombus and  $\angle BCF$  is  $98^\circ$ . BDF, CGF, DGE are straight lines. Find  $\angle DFG$ .



Do not write in this space.

Answer : \_\_\_\_\_ [3]

9. The figure is made up of 3 identical triangles. The area of the figure is  $140 \text{ cm}^2$ . Find the area of the shaded portion.



Do not write in this space.

Answer : \_\_\_\_\_ [3]

10. Tom and Jerry ran along a 3 km path around the reservoir. They started at the same point at 7.30 a.m. but ran in opposite directions. Both of them did not change their speeds throughout their run. They passed each other at 7.40 a.m. Tom's running speed was 180m/min. What was Jerry's running speed? Leave your answer in m/min.

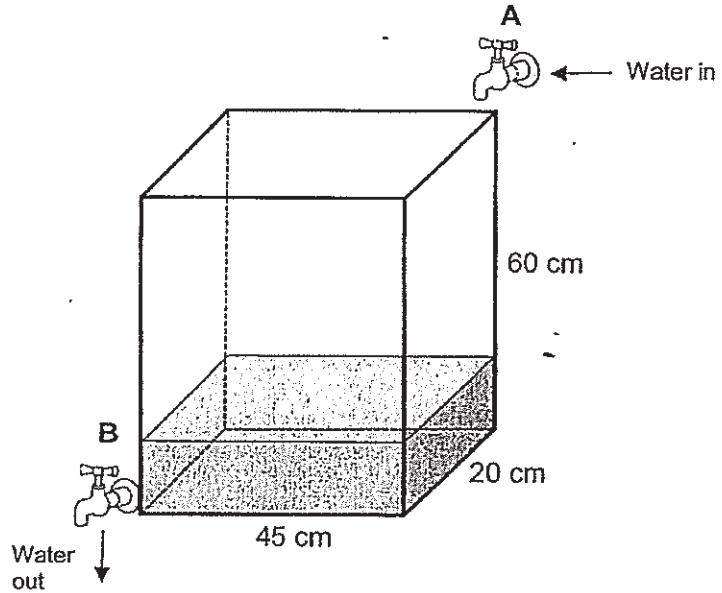
Answer : \_\_\_\_\_ [3]

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11. A tank measuring 45 cm by 20 cm by 60 cm is  $\frac{1}{4}$  filled with water. Water is flowing from Tap A into the tank at 9ℓ/min. Water is draining from Tap B at 6ℓ/min. Both taps were turned on at the same time. How long will it take to fill the tank completely with water? Leave your answer in minutes.

Do not write in this space.



Answer : \_\_\_\_\_ [3]

12. Ali and Mike went shopping together with a total sum of \$300. Ali spent twice as much as Mike. The amount of money Mike had left was \$36 more than what he had spent. Ali had twice as much money left as Mike. How much did Mike have at first?

Do not write in this space.

Answer : \_\_\_\_\_ [4]

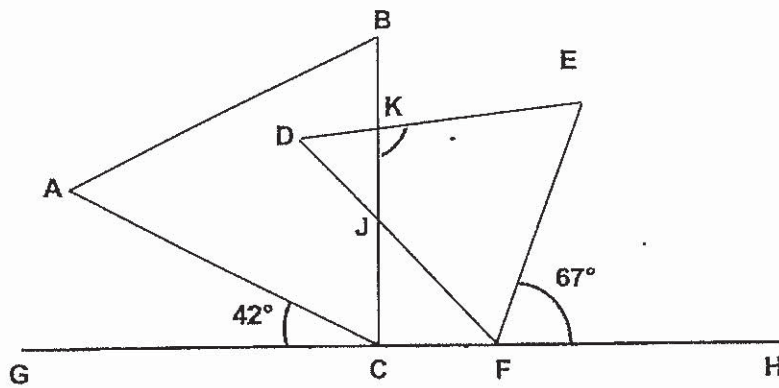
13. Sharon made some doughnuts to sell.  $\frac{3}{4}$  of them were chocolate doughnuts and the remaining were strawberry doughnuts. After selling  $\frac{5}{6}$  of the chocolate doughnuts and 210 strawberry doughnuts, she had  $\frac{1}{5}$  of the doughnuts left. How many doughnuts did she sell?

Do not write in this space.

Answer : \_\_\_\_\_ [4]

14. The figure below is not drawn to scale. ABC and DEF are equilateral triangles. GH is a straight line.  $\angle ACG = 42^\circ$  and  $\angle EFH = 67^\circ$ . Find  $\angle EKJ$ .

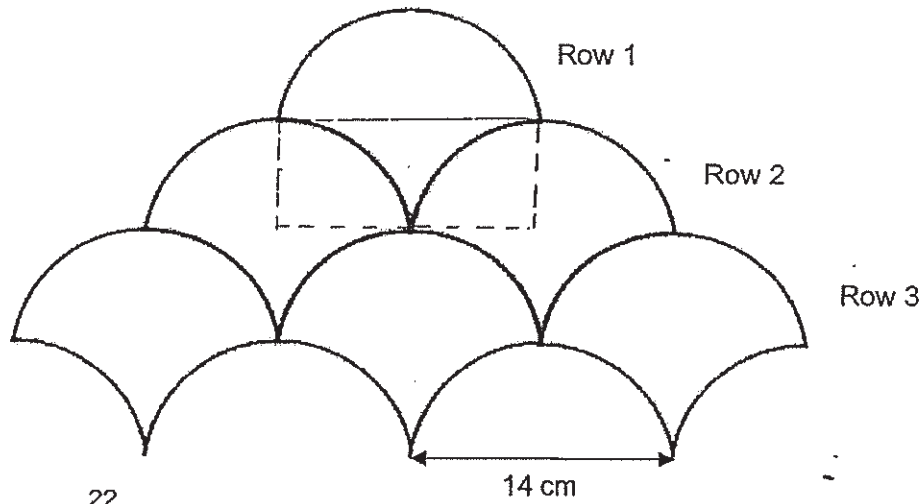
Do not write in this space.



Answer : \_\_\_\_\_ [4]

15. Identical wall tiles are laid in a pattern as shown below. 5 rows of tiles are formed.

Do not write in this space.



Taking  $\pi = \frac{22}{7}$ ,

- Find the area of one tile.
- Find the total area covered by the 5 rows of tiles were formed.

Answer : (a) \_\_\_\_\_ [2]

(b) \_\_\_\_\_ [3]

16. Jane, Ken and Leo decided to contribute some money to buy a present for their mother. Jane agreed to contribute 30% of the cost of the present while Ken agreed to pay 40% of the remaining amount. The rest of the price of the present will be paid by Leon.

However on the shopping day, they realised, the price of the item had increased by 25%. Jane paid \$36 for her share in the end.

- (a) What was the original price of the present?  
(b) How much did Leon have to pay for the present in the end?

Do not write in this space.

Answer : (a) \_\_\_\_\_ [3]

(b) \_\_\_\_\_ [2]

17. A shop owner sold 3 times as many shirts as dresses last month. The total amount collected was \$1980. She collected \$720 more from the sale of the shirts than from the sale of the dresses. A dress cost \$12 more than a shirt. Find the cost of a dress.

Do not write in this space.

Answer : \_\_\_\_\_ [5]

End of Paper 2





# ANSWER KEY

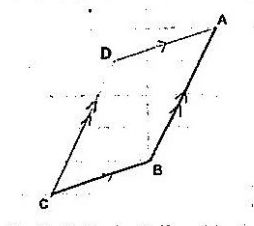
YEAR : 2019  
 LEVEL : PRIMARY 6  
 SCHOOL : MARIS STELLA HIGH SCHOOL (PRIMARY)  
 SUBJECT : MATHEMATICS  
 TERM : PRELIMS

## SECTION A

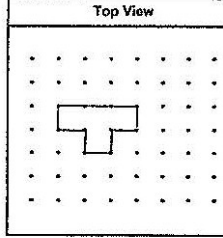
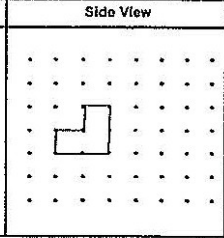
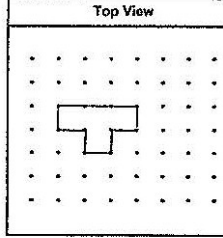
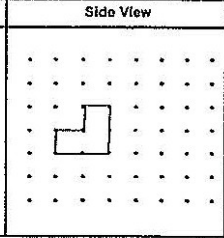
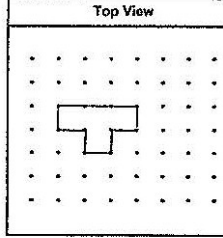
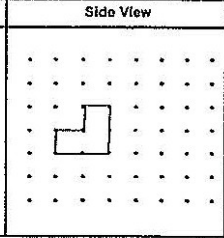
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
2	1	2	2	4	1	4	1
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
3	3	1	4	3	2	3	

## SECTION B

Q16	9294
Q17	$\frac{2}{15} \div 6 = \frac{2}{15} \times \frac{1}{6} = \frac{1}{45}$
Q18	7.045
Q19	1250ml
Q20	$\angle BFD = 180^\circ - \angle AFD$ $= 180^\circ - 130^\circ$ $= 50^\circ$ $\angle BFE = 180^\circ - 50^\circ - 25^\circ$ $= 105^\circ$
Q21	$1m = 3p$ $3m = 9p$ $9p + 6p = 15p$ $15 \div 3 = 5 \text{ pears}$
Q22	$16 \div 4 = 4$ (length of shaded face) $4 \div 2 = 2$ (length of each cubes) $2 \times 3 = 6$ (length of cuboid)
Q23	$30\% \rightarrow 24$ $100\% \rightarrow 80$ $80 - 14 - 24 - 16 = 26$
Q24	$72 \times 4 = 288$ $288 - 70 - 68 - 72 = 78$
Q25	(a) False (b) Not possible to tell (c) True
Q26	$\angle YCB = \angle CDA = \angle CBW = 70^\circ$ $\angle XYC = \angle BWC = \angle DCW = 180^\circ - 28^\circ - 70^\circ = 82^\circ$
	1

Q27	(a)   (b) $134^\circ$
Q28	$20 \times 60 = 1200\text{m}$ $1200 \div 50 = 24\text{min}$
Q29	$2u = 18\text{cm}$ $1u = 9\text{cm}$ Perimeter = $9 \times (7 + 5 + 7 + 5)$ $= 9 \times 24$ $= 216\text{cm}$
Q30	Diff in marks $\rightarrow 20 - 4 = 16$ Diff in average score $\rightarrow 80 - 78 = 2$ Friend in the group $\rightarrow 16 \div 2 = 8$

### SECTION C

Q1	$550 - 200 = 350$ $\frac{350}{550} = \frac{7}{11}$ Ans = $63.63 / 63\frac{7}{11}$				
Q2	$A \rightarrow 5u - 3u = 2u$ $B \rightarrow 1u + 85 - 85 = 1u$ (At first) (sold) (In the end) $1u = (865 - 85) \div 6$ $= 130$				
Q3	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Top View</th> <th>Side View</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Top View	Side View		
Top View	Side View				
					
Q4	Girls at first, 60% of 800 = 480 Girls remain 40% = 480 $40\% \rightarrow 480$ $60\% \rightarrow 480 \div 4 \times 6 = 720$ boys				
Q5	$15 - 3 = 12$ $12 \div 2 = 6$ notes				
Q6	(a) $A \rightarrow k$ $B \rightarrow 3k$ $C \rightarrow 3k + 8$ Total = $7k + 8$ (b) $7 \times 12 + 8 = 92$				

Q7	$5u = 9 \times 2 + 16 \times 2$ $5u = 50$ $u = 10$ $7u = 70$
Q8	$\angle ABD / \angle ADB = (180 - 68) \div 2 = 56$ $\angle DCG = 98 - 68 = 30$ $\angle EGF = 180 - 110 = 70$ $\angle DGC = 110$ $\angle CDG = 180 - 180 - 30 = 40$ $\angle FDG = 180 - 56 - 40 = 84$ $\angle DFG = 180 - 84 - 70 = 26$
Q9	$\frac{1}{2} \times 12 \times 10 = 60\text{cm}^2$ $60 \times 3 = 180\text{cm}^2$ $180 - 140 = 40\text{cm}^2$ $40 \div 2 = 20\text{cm}^2$
Q10	$180 \times 10 = 1800\text{m}$ Tom ran 1800m 3km = 3000m Distance of Jerry ran = 3000m - 1800m = 1200m $1200\text{m} \div 10 \text{ min} = 120\text{m/min}$
Q11	$\frac{1}{4} \times 45 \times 20 \times 60 = 13,500$ $13,500 \times 3 = 40,500$ 3l = 3000ml $40,500 \div 3000 = 13.5\text{min}$
Q12	A $\rightarrow$ $4u + 72 - 2u = 2u + 72$ M $\rightarrow$ $2u + 36 - 1u = 1u + 36$ (At first)    (spend)    (In the end) $(300 - 72 - 36) \div 6 = 192 \div 6$ $1u = 32$ $2u + 36 = 2 \times 32 + 36$ = \$100
Q13	C $\rightarrow$ $3u = 6p - 5p = 1p$ S $\rightarrow$ $1u = 2p - 210 = 2p - 210$ (At first)    (sold)    (In the end) $\frac{1}{5}$ doughnuts left $\rightarrow 8p \div 5 = 1.6p$ $1p + 2p - 210 = 1.6p$ $3p - 1.6p = 210$ $1.4p = 210$ $1p = 210 \div 1.4 = 150$ $5p = 150 \times 5 = 750$ $750 + 210 = 960$
Q14	$\angle FCJ = 180 - 60 - 42 = 18$ $\angle JCF = 180 - 60 - 67 = 53$ $\angle CJF = 180 - 78 - 53 = 49$ $\angle CJD / \angle FJK = 180 - 49 = 131$ $\angle EKJ = 360 - 60 - 60 + 31 = 109$

Q15	<p>(a) radius = <math>14 \div 2 = 7</math>  <math>7 \times 14 = 98\text{cm}^2</math>  <math>\frac{1}{2} \times \frac{22}{7} \times 7 \times 7 = 77\text{cm}^2</math> (Two quarter circle = one semicircle)  <math>98 - 77 = 21\text{cm}^2</math>  <math>77 + 21 = 98\text{cm}^2</math></p> <p>(b) <math>98 \times (1 + 2 + 3 + 4 + 5) = 98 \times 15 = 1470\text{cm}^2</math></p>
Q16	<p>J <math>\rightarrow 30\% = \\$36</math>  K <math>\rightarrow 70 \times 40\% = 28\%</math>  L <math>\rightarrow 100 - 30 - 28 = 42\%</math></p> <p>(a) <math>30\% = \\$36</math>  <math>100\% = 36 \div 3 \times 10 = 120</math>  <math>125\% = \\$120</math>  Original price = <math>\\$120 \div 5 \times 4 = \\$96</math></p> <p>(b) <math>42\% = \\$36 \div 30 \times 42</math>  <math>= \\$50.40</math></p>
Q17	<p>D <math>\rightarrow (\\$1980 - \\$720) \div 2 = \\$630</math>  S <math>\rightarrow (\\$1980 - \\$720) \div 2 + \\$720 = \\$1350</math>  1u <math>\rightarrow \\$1350 \div 3 = \\$450</math>  Diff <math>\rightarrow \\$630 - \\$450 = \\$180</math>  <math>\\$180 \div 12 = 15</math> unit of dress  <math>\\$630 \div 15 = \\$42</math></p>

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